tions and come housely, to distant over a com-





Refiners Find Conditions Easier With More Abundant Supand at traplyinStocks Larger

CHAPT CAME TO BE SOME

/ Sales of raw augar at New York during the week ending November 9 were 5500 tons full duty, 9000 bags Porto Ricos and 100,000 bags Cubas. Willett & Gray report receipts at the United States Atlantic ports, 50,959 tons; meltings, 42,000 tons; total stock, 59,999 tons, against 51,040 tons last week and 150,814 tons last year.

Estimated affoats to the United States from Cuba and Porto Rico, 25,000 tons; Hawaii, 10,000 tons; Philippine Islands, 15,000 tons; various, 15,000 tons; total, 75,000 tons, against total 90,000 tons last year.

Stocks Improve
Stocks in the United States and Cuba together of 179,016 tons, against 200,844 tons last week and 305,920 tons last year, a decrease of 126,904 tons

from last year.

In part, Willett & Gray report sales at 6.52c, which total 130,000 bags, include sugars of various countries, some free of duty, some at a concession of duty as Cubas, and some that pay the full duty as assessed by the tariff. The American was the principal buyer. Louisiana sugars about unchanged.

with lowest sales at 6 cents for 96 degree refining grades, with but little business reported.

The statistical position, as far as reflaces are concerned, shows signs of improvement, as the receipts this week are larger than meltings, being 05,959 tons against 42,000 tons required for

meltings. Total stocks are 59,999 Heavy Rains in Cuba

There appeared at Cuban shipping ports during the month of October 12,638 tons, against 13,668 tons same month last year. The exports of the week were of for size-33,175 tons to the United States Atlantic ports and 2,214 tons to Europe. Stocks are reduced to 111,504 tons, against 145,374 tons at this time last year.

. Heavy rains continue generally throughout the island. If a start earlier than usual is to be made in grinding the new crop, it will be neceseary for the heavy rains to stop soon and cooler weather set in, in order to ripen the cane and increase the sugar content. Late cable advices to us state that abundant rains have occurred in Santa Clara province, with fine weath-

Philippine Islands Special cable from Manila reports experts of 14:000 tons during October the United States Atlantic ports, 1000 tens to San Francisco and 7000 tons to eastern countries, a total of ients this ven have been large, a total of 129,000 tons being exported to the United States 313,000 tons to all countries, against 84,000 tons and 199,000 tons.

the corresponding figures for last year.

Exports from January 1 to October
31, 1916, to the United Kingdom were 68.440 tons, against 3250 tons during the same period last year. The large shipments would indicate that stocks in the Philippines are running very low at this time, the end of the season and just before the start of new crop Nineteen thousand tons are making. now affoat for United States eastern ports, against 27,000 tons at this time last year.

Special cable just received from Manila reports the 1915-16 crop has outturned 315,000 tons. This crop had previously been estimated at 300,000 tons. The 1916-17 crop just starting is estimated at only 220,000 tons, including 65,000 tops centrifugal sugars. British Refiners Make Money

A Glasgow paper announces that a big extension scheme is in contemplation by one of the Greenock sugar refining companies. This is a natural outcome of the prosperity which has been the lot of British refiners since the war broke out, and evidently confidence is felt that this prosperity in the British sugar refining business will continue after the war.

Weight and sugar content of the beets now being harvested in Germany, Austria Hungary and Belgium give results considerably below those of a year ago.

Sugar cards are expected to be in troduced in Sweden on November 1, 1916, as they have been recommended by the national food supply commission and will apply to the whole coun-

Sugar has been scarce in Denmark, with grocers limiting the quantity to be purchased for some time, but the matter is now being investigated, and some arrangement will be made to allevinte the existing difficulties.

will be expensive and can only be Oahu Sugar Company vice P. A. G. normal men received from 200 to 500 made where high-priced sugars can be Messahaert who has retired from active crams (six to sixteen ounces) of glucose paid for. The importations will be plantation work. It is reported that made by the ministry of trade in con- Mr. Messchaert may become an emcommittee on a systemized basis. Association to carry on certain investi-About 15,000 prisoners of war are to gations of general interest to the inwork the factories and refineries.

Capt. Jim Churchill, former New York police officer under "Bill" Devery, now Broadway restaurateur, de Hawaiian Commercial & Sugar Com- with a bottle of this liniment you are Alexander & Baldwin have received clares he has never been inside any of pany's mill, the largest factory in Ha prepared for most snything. For sale reports from Makawell that the cane light district.

## WORLD'S SUGAR CROP, 1916-17

FIRST OFFICIAL ESTIMATES BY "WILLETT & GRAY" AND "WILLETT'S SUGAR BULLETIN" COMPARED, AND REARRANGED, RECLASSIFIED AND SUMMARIZED BY A. M. NOWELL.

	Willett & Gray.	Willett's Sugar Bulletin,	W. comment	BEET AND C	AND SUMMARY	
	Oct. 19, 1916.	Oct. 20, 1916.	Period.	Carre Sugar	-11,425,000	12,171,000
U. S. Beet		255,000 840,000	July-Jan.	Beet Sugar	6,010,000	6,538,000
MAINLAND	1,098,000	1,098,000		GRAND TOTAL CROP	17,435,000	18,709,000
fawaii Porto Rico Philippines	575,000 425,000 300,000	625,000 450,000 375,000	NovJuly JanJune	I will have been fireful to	AL SUMMARY	
ISLANDS		1,450,000	Nov. June	North America Central America South America	75,000	1,111,000 161,000 832,000
TOTAL U. S. (PREE)		2,545,000		, AMERICAN CONTINENT	1,987,000	2,104,000
CUBA	. 3,400,000	3,300,000	Dec. June	West Indies	4,292,000	4,220,000
TOTAL PREFERENTIAL	5,798,000	5,848,000		Hawaii		625,00
British West Indies	80,000	90,000		Philippines	-	375,000
French West Indies Danish West Indies Ban Deminge	12,000	15,000 148,000		Porntosa and Japan	1,560,000 430,000	1,500,000
WEST INDIES	397,000	470,000	Jan. July	ASIATIC ISLANDS	2,290,000	2,305.00
British Honduras Other Central America Mexico	25,000	* 4,000 57,000 100,000		China, etc.		2,500,000 410,000
MEXICO AND CENTRAL AMERICA	-	161,000	JanJune	ASIATIC CONTINENT	2,400,060	2,910,00
Peru	200,000	225,000	Oct. Feb.	ABIA		5.215,00
Brastl Argentine Venezuela	175,000	275,000 120,000	OctFeb.	African Continent	285,000	290,000
Venezuela Dolombia	10,000	15,000 • 30,000	OctDec.	AFRICA		555,00
Polombia Paraguay Bolivia		* 10,000 * 10,000		EUROPE		8,690,00
Bouador		* 12,000		AUSTRALIA AND FIJI		300,00
INDEPENDENT SOUTH AMERICA		697,000		GRAND TOTAL CROP	-	18,709,00
Demerara (British Guiana)		120,000	Oct. Dec. May-June	The state of the s	BY NATIONS	10,174,00
Surinam (Dutch Guiana)	. , 15,000	15,000	Oct. Jan.	U. B. Control	2.898.000	2 545,00
SOUTH AMERICA		832,000		Mexico and Central America	75,000	3,300,00
AUSTRALIA AND POLYNESIA		300,000	June Nov.	South American Republics Santo Domingo	635 000	697.00 148,00
FORMOSA AND JAPAN		430,000	Nov. June	REPUBLICA		6,847,00
Madeira (Portuguese) Angola (Portuguese)	** ******	* 8,000 * 20,000				16,00
Angola (Portuguese) Masambique (Portuguese) Manritius (British)	220,000	217,000	May Oct.	Canada' British South America British West Indies British Hondaras	120,000	120.00 217,00
Settion (French)	128,000	110,000	May Oct.	British India	2,400,000	2,500,00
AFRICA		100,000	Jan. June	Australia and Fift	310,000	300,00
		555.000		BRITISH	3,454,000	3.584,00
China Indo China (French)	10 00000	* 260,000 * 60,000		French West Indian		90,00
Siam Malay States India (British)		* 40,000 * 50,000	Dec May	French Africa French Indo China France (Beets)	40,000	60,00
7ava (Dutch)	1,560,000	2,500,000 1,500,000	May-Nov.	PRENCH		200,00
ASIA	3,960,000	4.410,000			286,000	390,00
CANADA (BEET)	14,000	16,000	Oct. Dec.	Java Surinam Holland (Resta)	15,000	1,500,00
Garmany Austria		1.800.000		Holland (Beets)	The second second	260,00
Belgium Bervia	100,000	110,000		PORTUGUESE AFRICA	-	1,775,00
Bulgaria		20.000		CHINA, SIAM, MALAY		350.00
CENTRAL ALLIES CONTROL	2,724.060	3.084.000		CENTRAL ALLIES (BEETS)		3,034,00
Prance	1,400,000	200,000		Danish West Indies		15,00
Italy Rolland	1 160,000	180.000 260.000		Denmark (Beet)	148,000	150.00
Sweden Denmark	116,000	116,000		DENMARK	160,000	165,00
Spain Switperland	110.000	2,500		RUSSIA (BEET)	-	1,610,00
Roumania	39,500	39,500		ITALY AND SWEDEN (BEET)		276,00
OTHER EUROPE	2,426,000	2,648,000		ROUMANIA & SWITZERLAND (Beets	42,090	42,00
TOTAL EUROPE BEET	5,150,000	5,682,000	Sept. Jan	SPAIN		118,00
SPAIN (CANE)	6,000	8,000	DecJune	JAPAN AND FORMOSA		430,00
TOTAL EUROPE		5,690,000		GRAND TOTAL CROP	17,435,000	18,709,00
TOTAL NON-PREFERENTIAL		12,864,000		* Segregation estimated — W. & G. com * Willett & Gray make no estimate for	bined total for th	iese countrie
GRAND TOTAL CROP	17,435,000	18,709,000		The second secon	The second secon	Α.

Concrete Ditch Lining

Engineering Record gives details of construction and cost of work on the Okanigan irrigation project in Wash-ington, where a good many miles of ditches have, been concreted. It was ound that seepage losses were reduced from Afty-one to afteen per cent of the total water received at the head gates. No trouble has been experienced on account of contraction and expansion injuring the lining even when the water is rotated and the canal is dry half the time during the summer."

A. N. Burch, in United States Reclamation Record, gives data on the methods of placing and cost of concrete linng in twenty two miles of laterals on Orland project. The total cost per square yard of this work has been 34.3 cents. The proportions of the mix used were 1:3.5. There was practically no machine mixed concrete was more uniform and of a better grade.

### Dynamite Experiments

decrease in the plant crop.

#### Three Promotions

ist at Makaweli has been appointed ton have recently published results or In Bussia preparations are being mill superintendent at Honokan in investigations on the food value of pure with the Petrograd bourse ploye of the Hawaiian Sugar Planters' be allotted to the sugar industry to dustry in connection with manufacturing problems.

## Puunene Grinds Today

## CAPITALIZED COST OF **IMGATION PROJECTS**

That the capitalized cost of irrigation New York Correspondent Con- Oil Stocks and Copper Advance structures is being given more consideration than the first cost, is stated by S. T. Harding in a recent number of Engineer and Contractor. His report deals with the factors involved in a

choice between concrete and wood.

It is concluded "that no general conclusions can be drawn as to the most economical type of construction. For any particular project where the con-struction costs can be estimated and difference in cost whether the material ditions of the constructing organizawas hand or machine mixed, but the tion, rate of interest, scertainty as to type of structure desired, and permanence of its location can be given proper weight, a decision can be made.
"Under usual conditions concrete will

be the preferable material if the cap-F. Warts reports results of experi- italized cost of service alone is considments with dynamite used in preparing eryd. The other factors are, however British West Indies, in a bulletin of the choice toward wood for first construcimperial department of agriculture tion, except for the larger and more im-(West Indies). Experiments on heavy portant structures. That the capital-

According to the Journal of Biologi Cuba Same As Us cal Chemistry there is no limit to the "The reported of G. H. Halden for many years cheme adults. A. E. Taylor and Florence Hullight breakfast. Analysis of the blood the extent of the utilization.

#### ACCIDENTS WILL HAPPEN.

It may be impossible to prevent an 'car.'' secident, but it is not impossible to be prepared for it. Chamberlain's Pair Balm is not beyond anyone's purse, and Ltd., agents for Hawaii.

### **NEXT CUBAN CROP** BUSINESS BETTER ON LOCAL STOCK EXCHANGE ABOUT LIKE LAST

## firms Menocal's Reelection As President

York correspondent of one of the sugar Oahu and 530 Olas. Hawaiian Commerhouses writes as follows:

"There has been but little change this market since our last report. the other factors, such as financial con- buyers are not disposed to climb for what they need, while sellers appear to determined to hold their sugars until something happens to change the outlook. Yesterday the American and other refiners took about 130,000 bugs outlook. ubas, Porto Ricos, Perus and St. Croix all at the equivalent of 514 cents & f. for Cubas.

"There are today at few small lots fields for cane on the Island of Antigua, more usually such as to include the of nearby and prompt. Cubas available the same price, but buyers are ther inclined to wait. Operators nate recons learn soil in growing plant and traction cames using two ounce dynamite cartridges inserted 2.5 feet deep gave results which are not constructed by a results which are not conserved and periments on heavy clay soil an increase was obtained in the rattoon crop and a decrease in the plant crop. come into the market sporadically and crop will be far into December.

"The reported election of Zayas as president of Cuba seems to have been premature, like similar reports neares home, and it is now believed that Men oeal has been reelected, which, it is made for the importation of American place of Alfred Krafft. Mr. Krafft glucose. Perfect digestion and come thought, will work for still greater stand. Java angars. Such importations has been appointed chief chemist of plete assimilation was the result where hilly in the island.

> two and a half to three hours after a of Havans and just given out by a only interested in Cubas at 5.27. light breakfast. Analysis of the blood local brokerage house confirms our reand excreta were made to determine marks about the retardation of the har and Western beets by frost are be greatly exceed the one taken off this tinues. A "norther" is blowing in car."

#### Kauai Tassells Light

. This indicates irregularity in ripening, ares which may cost you dear.

# and Sugar Is Stronger

## Stocks were a little more active yesterday, total sales mounting to 1935

Under date of November 10, the New shares, 500 of which were Pioneer, 525 cial gained a half, Olaa three-eighths and McBryde a quarter; Hawaii Con-solidated Ry. "A" soid at previous level; Pioneer lost a quarter und Oahu There was one bond sale, \$2500 Ha-

waii Consolidated Railway 5s, without change. Singapore robber quotations, Size vs. Efficiency are 62.42 cents per pound instead of 62.40 as stated yesterday. There was renewed activity in vellow list stocks." Sales reported were 3700 Engles Copper at 4.87 1-2; 5640

Mineral Products at 1.29; 1000 Homo-

lulu Oil at 3:77 1-2, 750 at 3.80 and 150

at 3.88-1-2; and 3540 Mountain King at 50 cents. Bid and Asked prices were, Honolulu Oil 3.80-3.82 1-2; California Hawaiian 10-14 cents; Engels Copper, 4.82 1-2 ### Mineral Products, 1.28 1-2 1.29; Mountain King, 45-52 1-2 cents; Tipperary 4-6 cents.

#### WEATHER REPORTS HAD INFLUENCE ON PRICES

Sales during the week ending November 18 were very moderate, secording to New York advices to Alexander & "Referring again to the new Cuba Baldwin, | Late Cubas were offered at rop a statement made by Guma Mejer 5.40 and full duty 6.38, but buyers were

Reports of damage to Louisiana cane vest due to rains, and further hazards dieved to have been exaggerated. The the opinion that the new erop will not loss will be slight if good weather concooler weather. It is probable the mills can not start grinding before the mid dle of November.

To dream that you are at a banquet

# OF CUBAN SUGAR

Very Cheap Cane Balances Mediterranean Fruit-fly Experi-Inefficiency In the Mill

experience in the field in connection findings are not out of place in these with a score of factories, his digest columns.

Some of these results are published from which the following notes are taken, is of exceptional interest; many other points besides these here noted, are touched upon, and the original ar-ticle is well worth a careful perusal. Control of the factory: As h rule, this is divided between the chief en-

products. satisfactory, is evident enough from the low efficiency attained at many, if not at most of the factories.

#### Efficiency of Cuban Factories

CROP OF 19	13	•	14.		_		
Sucrose in Sugars, per 100 Sucrose in Cane	13.3	7	143	69.7	75.5	76.1	74.4
Sucrose in Sugars, per 100 Sucrose in Juice	91.8	200	6,68	86.7	87.3	90,3	89.0
Sucrose in Juice, per 190 Sucrose in Cane	8.50	5	82.6	4.08	6.58	84,3	83.6
06 test Sugar per 100 Cane	10,60	11,33	10.90	10.97	10.96	10.93	10.98
Sugar in Cane	13,59	14.FI	14.08	15,10	13,90	13,77	14.17
ш						*********	
PROVINCE	nar del Eso.	pann.	atarizas	nta Chra	magner	sente	Average.

Contrary to expectation, the average

Sugar Tons of	ugar Por Cent Cane	Sugar per Cent	n Cane
15,000	14.50	11.60	76.8
30,000	14.08	11.16	76.0
45,000	15.37	10.08	69.0
35,000	13.98	11.35	78.6
35 000 /	13.70	10.86	74.1
30,000	13,60	11.41	80.6
30.000	13.76	11.12	77.0
25,000	12.79	10.25	739 4
25,000	14.15	11.33	77.5
50 000 -	15 00	10.93	65.5
70,000	15 40	10.50	65.7
35.000	13.97	10,38	731.7
30.000	14.50	10.57	72.0
70,000	13 20	11-48	N2.H
40,000	13.67	10.37	72.9

Average .....

very low efficiency in Cuban mills is grees. the result of the argument that a great enpacity and a large output will proluce greater profits than more efficient working and a smaller output. It may siso be due to a lack of appreciation of the results indicated as possible from a study of a complete technical control. The connection between efficiency and apacity is very complicated and inludes many variables; given a factory gar, the price paid for cane, the percentage yield on cane, the overhead charge, etc." The writer proceeds to indicate this variation. Cost of Production

seven and a half per cent, computed as wagon. On public railways the usual ugar at the current market price in charge is eleven cents per ten kilome Cuba. This refers to cane cut, hauled fers per metric ton, plus \$1 a day for and loaded on railway cars, the purexclusive use of a car plus \$100 per day Thus, with came at five per cent and agar at three cents, the cost of a ton \*" to \$10 per ton. cane is \$3.00 f. o. b. cars.

railway cars in western Cuba, \$2.13 per States. In normal times freight and

anges from about \$5 per acre to-unthe rival lobster palaces in the bright waii, starts work on its big 1917 crop by all dealers. Benson, Smith & Co., is tasselling very lightly this year, signifies that you should avoid pleus be to evolve the expected before to be not including the establishment of

# REFRIGERATION CONTROLS PESTS

ments of Back and Pemberton Work

In the July and August issues of the | Few realize the comprehensive char-International Sugar Journal (1916) ap actor of the work done here by Dr. E. pear some very interesting data on the A. Back and his assistant, C. E. Pem-Cuban sugar industry, based on a de- berton, in their experiments on the lifetailed report by the department of agri- history and control of the Mediterranrulture, commerce and labor, supplemented by several other official publications. As the writer has had personal a resume of some of Doctor Back's

Worth Money To Hawaii

in a recent number of the Journal of Agricultural Research, the official organ of the department of agriculture at Washington, covering determinations of the effect of various temperatures used in commercial cold storage plants upon engineer (jefe maquinista) and the fact the pups of the Mediterranean fruit-

tory superintendent (jefe de fabricactory superintenden cion) the former has charge of the plant—the boilers, mills and so forth, attention to the fact that while the while the latter works up the juice de greatest danger in the spread of this livered to him into sugar and its by pest from one country to another lies in the transportation of the larvae That the working out of such a plan, within the fruits, it is possible that the with divided responsibilities, is rarely pest may be carried in the pupal stage and arrive at destination in a condition to produce infestation. It is stated that nearly all the experimental work with temperatures lower than forty-five degrees Fahrenheit was carried on n a thoroughly modern cold storage

Experiments Exhaustive Their observations, made on 173,318 pupae, indicate that none survived repupe, indicate that none survived re-frigeration. "About fifty degrees is the critical point below which develop-ment can not take place and below which death will follow if refrigeration is continued sufficiently long." In part they state: "At forty-nine to fifty-one degrees only nine out of 39,500 puppe yielded adults in refrigeration twenty to forty-seven days after the intwenty to forty-seven days after the inward date, while three out of six held at fifty two to fifty-six degrees yielded adults in refrigeration thirty-eight to fifty-two days after the inward date. Many pupue can complete their course development in refrigeration at fifty-development in refrigeration at fifty-four to fifty-seven degrees, while higher temperatures, not considered here, mere-ly retard development without causing noticeable mortality

"Pupac cannot withstand tempera-tures below fifty decreases."

tures below fifty degrees for prolonged periods of time. Only three and one pupa survived refrigeration for eight and nine days respectively, at thirtypupae survived ten days at this tem-perature. Refrigeration at a temperature averaging thirty-four degrees, but ranging from thirty-three to thirty-six, proved fatal after the seventeenth day; result of lifteen of the larger factories 6017 pupae refrigerated at this tempresents an average result only slightly perature from eighteen to twenty-five hetter than the grand average given days yielded no adults, while the num-This supears clearly from the follow- for fourteen to seventeen days was very

> Low Temperatures Patal "No paper survived refrigeration at twenty eight to forty degrees, but averaging thirty six degrees, for more than bein days. A temperature of thirtyafter the nineteenth day; 30,731 pupa refrigerated for from twenty-one to thirty five days failed to yield adults on removal to normal temperatures. After refrigeration from forty to forty-five degrees pupae from each of two lots removed after refrigeration for twentyfour to twenty-seven days, respectively, vielded adults; 500 pupae removed after refrigeration from thirty one to thirtyfour days proved to be dead."

One of Doctor Back's conclusions was that "it does not seem safe to conclude that the age of the pupa has a direct bearing upon its ability to with stand the more ordinary ranges of cold storage temperatures." The results above noted indicate that

there is an opening for the development of a fresh fruit and vegetable export business from Hawaii in such products as can be held three weeks in cold stor-The writer observes that: "This age at temperatures under forty de-

This report also shows the extremely painstaking and methodical manner in which the United States department of agriculture exports are willing to investigate Hawatian problems when called upon to do so.

#### Bagasse Paper

One of the most interesting exhibits at the Maul County Fair is to be a as a constant, the economic limit of pro- full line of bugusse paper samples, duction may vary with the p. of su Plantation visitors will find this exboard he will revert to his leave status,

Harvesting expenses: Cutting and loading with bulleek carts, about sixty Purchase of cane: Cane may be ing. about forty-five cents per ton, in ought at from four and a haif to cluding the transfer to the railway

Manufacturing expenses 'range from

Marketing expenses: Under this Cultivation expenses in western heading are included all expenses from the Cost of a ton of came f. o. b. factory to port of entry in the United charges to New York will be about Price of land: In eastern Cuba this \$2.70 per ton. Cost of factory: A rough rule for

ler special conditions #25 per acre. the establishment of a central applica-Cost of establishment: The total cost ble to normal times is to allow \$15 per of come ready to cut from new hand will bee expecity, to include factory, land, r is thereo \$35 and \$50 per sers. At however, railway system and carts, the crop.